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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,875	11/20/2003	Robert H. Feldmeier	706.003PA	9384
25891	7590	04/05/2006		
BERNHARD P. MOLLDREM, JR. 224 HARRISON STREET SUITE 200 SYRACUSE, NY 13202			EXAMINER BECKER, DREW E	
			ART UNIT 1761	PAPER NUMBER

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/717,875

Applicant(s)

FELDMEIER, ROBERT H.

Examiner

Drew E. Becker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 21-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of group I is acknowledged. The traversal is on the ground(s) that the apparatus of group II cannot be used for another process. This is not found persuasive because the apparatus could easily be used for sterilization of food products by simply heating them to a higher degree. Furthermore, Hasting teaches that a pasteurizing device can be used for other purposes, such as chemical preparations (column 1, line 26). Applicant also argues that a balance tank was required for the process of group I. However, there is mention of a balance tank and the method could easily be performed by use of continuous feeding from a preliminary process, such as filtering.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 21-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasting [Pat. No. 4,534,986].

Hasting teaches a milk pasteurization process including supplying milk to a regenerative heat exchanger to preheat it (Figure 1, #1-2), flowing the milk through a counter-flow, UHT fluid heater (Figure 1, #15), holding the milk at the UHT temperature (Figure 1, #20), flowing the milk back through the regenerative heat exchanger in counter-flow (Figure 1, #3), packaging the pasteurized milk (column 3, line 61), the temperature differential in the fluid heater being less than 20°F (column 3, lines 15-28), the temperature differential of the product leaving and the medium entering the fluid heater being about 5°F (column 3, lines 15-28), and the proteins inherently denaturing during the preheating to 74°C (column 2, line 51) as evidenced by Fenema [Food Chemistry 3<sup>rd</sup> Edition] which shows that denaturation of whey proteins occurs rapidly at temperatures above 70°C (page 866).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14-15 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasting.

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Hasting teaches the above mentioned concepts. Hatsings does not specifically recite a fluid to milk flow ratio of 2:1, or a milk velocity of less than 6 ft/sec. It would have been obvious to one ordinary skill in the art to use a fluid to milk flow ratio of 2:1, and a milk velocity of less than 6 ft/sec, in the invention of Hasting since Hasting simply did not recite any specific flow parameters, since Hasting taught adjusting the ratio of flow rates (column 3, lines 29-40) and adjusting the milk speed (column 4, lines 14-32), and since these flow parameters would have helped ensure full pasteurization the milk.

7. Claims 1-9, 11-12, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasting in view of McElroy [Pat. No. 3,567,470].

Hasting teaches a milk pasteurization process including supplying milk to a regenerative heat exchanger to preheat it (Figure 1, #1-2), flowing the preheated milk through a holding tube which passes through a homogenizer (Figure 1, #4-6), flowing the milk through a second regenerative counter-flow heat exchanger to heat it to a temperature close to the UHT temperature while keeping a temperature differential of less than 20°F (Figure 1, #7), flowing the milk through a counter-flow, UHT fluid heater (Figure 1, #15), holding the milk at the UHT temperature (Figure 1, #20), flowing the milk through a regenerative counter-flow heat exchanger to cool it (Figure 1, #25), flowing the milk back through the regenerative heat exchanger in counter-flow (Figure 1, #3), packaging the pasteurized milk (column 3, line 61), the temperature differential in the fluid heater being less than 20°F (column 3, lines 15-28), the temperature differential of the product leaving and the medium entering the fluid heater being about 5°F (column 3, lines 15-28), and the proteins inherently denaturing during the preheating to 74°C (column 2, line 51)

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as evidenced by Fenema [Food Chemistry 3<sup>rd</sup> Edition] which shows that denaturation of whey proteins occurs rapidly at temperatures above 70°C (page 866). Hasting does not recite using pasteurized milk as the heat exchange fluid in all of the regenerative heat exchangers, a fluid to milk flow ratio of 2:1, an about 15°F difference between the milk entering and the fluid leaving the heater, a denaturing temperature of substantially 175°F, and a hold time of at least 60 seconds. It would have been obvious to one of ordinary skill in the art to use a fluid to milk flow ratio of 2:1, a milk velocity of less than 6 ft/sec, and a hold time of at least 60 seconds, in the invention of Hasting since Hasting simply did not recite any specific flow parameters, since Hasting taught adjusting the ratio of flow rates (column 3, lines 29-40), adjusting the milk speed and increasing the hold time (column 4, lines 14-32), and since these flow parameters would have helped ensure full pasteurization the milk. McElroy teaches a process for pasteurizing milk by using counter-flow regenerative heat exchangers which use the pasteurized milk as heating medium (Figure 1, #12 & 34) and an about 15°F difference between the milk entering and the fluid leaving the heater (Figure 1, #36). It would have been obvious to one of ordinary skill in the art to incorporate the milk heat regeneration and temperature difference of McElroy into the invention of Hasting since both are directed to methods of pasteurizing milk, since Hasting already included a second counter-flow regenerative heat exchanger (Figure 1, #7), since a larger temperature difference would have provided faster heating, and since the use of pasteurized milk as the heating medium would have eliminated the need for the regenerative circuit of Hasting (Figure 1, #9-11), thereby reducing the amount of equipment and energy needed.

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8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasting, in view of McElroy, as applied above, and further in view of van Schagen et al [Pat. No. 4,610,298].

Hasting and McElroy teach the above mentioned concepts. Hasting and McElroy do not recite tube-in-tube heat exchangers. Van Schagen et al teach a method for heating milk by use of counter-flow tube-in-tube heat exchangers (Figure 3). It would have been obvious to one of ordinary skill in the art to incorporate the tube-in-tube heat exchangers of van Schagen et al into the invention of Hasting, in view of McElroy since all are directed to methods of heating milk, since Hasting already included plural counter-flow regenerative heat exchangers but simply did not describe them in detail (Figure 1, #2, 7, 25), and since van Schagen et al teach that tube-in-tube heat exchangers were commonly used heating milk (Figure 3).

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Olson et al [Pat. No. 2,522,796], Kemp [pat. No. 4,416,194], Palm [Pat. No. 3,451,471], Nellis jr et al [Pat. No. 3,041,046], Thomson [Pat. No. 2,937,856], Swarr [Pat. No. 2,159,110], Faust [Pat. No. 2,170,402], Ziegler [Pat. No. 2,472,998], Dahlstedt [Pat. No. 3,010,832], Wakeman [Pat. No. 4,161,909], Assinder et al [Pat. No. 4,640,840], Aule et al [Pat. No. 4,542,034], and Stauffer [Pat. No. 5,266,343] teach methods of heating fluid foods.

### ***Response to Arguments***

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10. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Drew E. Becker whose telephone number is 571-272-1396. The examiner can normally be reached on Mon.-Fri. 8am to 4:30pm.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**DREW BECKER**  
**PRIMARY EXAMINER**  
3-31-06